

CLAIMS

What is claimed is:

1. A hearing aid body adapted to interchangeably fit inside either a right side or left side of an ear canal of a typical user such that a distal end of the body is disposed proximally adjacent to a tympanic membrane of said user.
2. The body of Claim 1 formed of two half shells joined together with hollow interiors for housing hearing aid components.
3. The body of Claim 2 in which a soft tip is secured at the distal end of the body.
4. The body of Claim 3 wherein the tip includes a sound port for coupling sound from a receiver housed in the body to the membrane of a hearing aid user.
5. A non-specific removable hearing aid having a shell which is shaped to be useable with a right ear or left ear and which houses the requisite ^{components} component for a functional hearing aid.
6. The hearing aid of Claim 5 in which the shell is formed of two halves which are bonded together and wherein a flexible tip is retained at a distal end of the shell.
7. The hearing aid of Claim 6 in which the components include a permanently wired battery and the hearing aid is adapted to be disposable.
8. A hearing aid formed of a semi-rigid shell enclosing hearing aid components with a flexible tip retained at one ^{end} of the shell, the shell having a shape adapted to fit in the ear canal of either a right or left human ear.

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9. The hearing aid of Claim 8 in which the tip contains a receiver and a sound tube extending between the receiver and a distal end of the tip.
10. The hearing aid of Claim 9 in which the shell is formed of two half-shells joined together and in which the components include a microphone, and signal processing electronics and a battery permanently wired to the electronics.
11. A method of making a model of a hearing aid housing which is adapted to be inserted into either a right side or a left side of an ear canal adjacent to a tympanic membrane of a typical user comprising the steps of:
- a) obtaining sample ear impressions from a plurality of subjects;
 - b) generating three-dimensional topological data corresponding to each the surface of the samples;
 - c) generating volume data representing volumes corresponding to the 3D geometry of the topological data obtained from each sample;
 - d) processing the volume data of each sample to generate a first single set of data which represents the intersection of all the volumes;
 - e) using the first set of data to generate a second set of data representing a mirror image of the first set of data;
 - f) using the first and second sets of data to generate a third set of data representing a third volume resulting from the intersection of the two sets of data; and
 - g) using the third set of data to produce a physical model representing the third volume.
12. A shell for a hearing aid made in accordance with the model made in accordance with the method of Claim 11.
13. The shell of Claim 12 formed of two half-shells joined together.

14. A hearing aid made from components mounted in the shell of Claim 13.
15. The hearing aid of Claim 14 in which the shell contains at least the following components required for a functional hearing aid, a battery, a microphone, signal processing electronics and a receiver.

- 5 16. A body for a hearing aid unit having ^{a length "L" by width "W"} ~~an oval~~ cross section which gradually varies from an outer dimension of about .519 mm by .406 mm to a middle dimension of about .470 mm by .336 mm and to an inner dimension of about .228 mm by .214 mm.

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